Notice of Allowability	Application No.	Applicant(s)	
	10/611,970	WATANABE, MASAHITO	
	Examiner	Art Unit	
	Mohammed Hasan	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/3/2003*.

2. ☒ The allowed claim(s) is/are *1, 2, 6 - 10, 19, 20*.

3. ☒ The drawings filed on *03 July 2003* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☒ Certified copies of the priority documents have been received in Application No. *09/709,551*.
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 7/3/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Priority

1. Receipt of acknowledged of papers submitted under 35 U.S.C. 119 (a) – (d), which papers have placed of record in the file.

Oath/Declaration

2. Oath and declaration filed on 7/3/2003 is accepted.

Information Disclosure Statement

3. The prior art documents submitted by applicant in the Information Disclosure Statement filed on 7/3/2003 have all been considered and made of record (note the attached copy of form PTO – 1449).

Allowable Subject Matter

4. Claims 1, 2, 6 – 10, 19 and 20 are allowed.

5. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a

rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 1, 2, 6 – 10, 19, for example which include a zoom lens system having in order from an object side, a first lens group having negative power, an aperture stop, a second lens group having a positive power and a third lens group having positive power, first and third lens group further comprises a lens element having an aspherical surface and satisfies the following the condition satisfies:

$0< (1/ r_{a1} – 1 / r_{m1}) h_1 / (n_{a1} – n_{a1'}) < 1$, $- 1 < 1/ r_{a3} - 1/ r_{m3}) h_3 / (n_{a3} - n_{a3'}) < 0$, $-.1 < (1/r_{a1'} - 1 / r_{m1}) h_1 / (n_{a1} – n_{a1'}) < 1$, where r_{a1} is a paraxial radius of curvature of an aspherical surface I located in first lens group, r_{m1} is a distance from a point of intersection of an optical axis with an aspherical surface I located in first lens group point on the optical axis where a normal to an arbitrary point (1) between the maximum diameter of an axial light beam on an aspherical surface I and an effective diameter including an off – axis light beam on an aspherical surface I is closest to the optical axis, n_{a1} is a refractive index of an aspherical surface I on an object side thereof, $n_{a'}$ is a refractive index of an aspherical surface I on an image side thereof, h_1 is a height of point (1) from the optical axis, r_{a3} is a paraxial radius of curvature of an aspherical surface III located in the third lens group, r_{m3} is a distance from a point of intersection of the optical axis with an aspherical surface III located in third lens group to a point on the optical axis where a normal to an arbitrary point (3) between the maximum diameter of an axial light beam on aspherical surface III and an effective diameter including an off-axis light beam on an aspherical surface III is closest to the optical axis, n_{a3}

is a refractive index of an aspherical surface III on an object side, $n_{a3'}$ is a refractive index of an aspherical surface III on an image side thereof, and h_3 is a height of point (3) from the optical axis, $r_{a1'}$ is a paraxial radius of curvature of the concave surface coated thereon with the resin to form an aspherical surface I located in the first lens group (claims 1, 2 , and 8); and $.4 < f_3 / f_t < 2.5$, where f_3 is a focal length of the third lens group and f_t is a focal length of zoom lens system at a telephoto end (claims 3,); $1.2 < f_{1-N} / f_{2-N} < 2.7$, where f_{1-N} is a focal length of the negative lens located nearest to the object side in first lens group, f_{2-N} is a focal length of the second negative lens in the first lens group (claim 4, 9); and $2 < f_3 / IH < 12$, where f_3 is focal length of the third lens group and IH represents an image height (claims 5); $-1 < (1 / r_{a2} - 1 / r_{m2}) h_2 / (1 - n_{a2'}) < 0$, where r_{a2} is a paraxial radius of curvature of an aspherical II located in the second lens group, r_{m2} is a distance from a point of intersection of an optical axis with an aspherical surface II located in the second lens group to a point on the optical axis where a normal to an arbitrary point (2) between the diameter that is 7/10 of the maximum diameter of the axial beam on an aspherical surface II and the maximum diameter of the axial beam on an aspherical surface II is closest to the optical axis, $n_{a2'}$ is a refractive index of the lens element located nearest to the object side in the second lens group, h_2 is a height of point (2) from the optical axis (claims 6 , 7); and first lens group are all defined by meniscus lens components , each convex on an object side thereof and the following condition is satisfied : $-1.35 < f_1 / f_3 < -.4$, where f_1 is a focal length of the first lens group, and f_3 is a focal length of the third lens group (claim 10) ; and $-1 < (1/ r_{a3} - 1/r_{m3})$

$h_3 / (n_{a3} - n_{a3'}) < 0$, where r_{a3} is a paraxial radius of curvature of an aspherical surface III located in the third lens group, r_{m3} is a distance from a point of intersection of the optical axis with an aspherical surface III located in the third lens group with an aspherical surface III located in the third lens group to a point on the optical axis where a normal to an arbitrary point (3) between the maximum diameter of an axial light beam on the aspherical surface III and an effective diameter including an off-axis light beam on an aspheriacl surface III is closest to the optical axis, n_{a3} is a refractive index of an aspherical surface III on an object side thereof, $n_{a3'}$ is a refractive index of an aspherical surface III on an image side thereof, and h_3 is a height of point (3) from the optical axis (Claim 19).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art

Mihara et al (US 2003/0189762 A2) discloses zoom lens and electronic imaging system using the same.

Ori (US 2004/0051963 A1) discloses three – group zoom lens.

Wachi et al 6,308,011 B1) discloses a zoom lens and photographic apparatus having the same.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH
July 14, 2004

Scott J. Sugarman
Primary Examiner